

# Syed M. Affan

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I'm a dedicated and hardworking Senior Computer Engineering undergraduate based in Abu Dhabi. I have a passion for specialized programming, whether in ML for several applications, data science, or backend/frontend app development. I possess dexterity with a multitude of frameworks & software whether its coding, design, or editing and I work best in innovative environments.

## EDUCATION

Khalifa University – *BSc, Computer Engineering*

*Abu Dhabi, UAE* | Expected Graduation: 07/2025

- **GPA:** 3.59/4.00
- Achieved the Honorary **President's List** for Academic Excellence | **IEEE KU Student Chapter** Member
- **Courses:** Data Structures, OOP, Network Security, Computer Security, Embedded Systems

## SKILLS

**Languages:** Python (5 years), C/C++/C# (4 years), HTML/CSS (3 years), Java & SQL (3 years), JavaScript/Dart (1 year)

**Frameworks and Libraries:** PyTorch/TensorFlow, Langchain, React/React Native, Flutter, Node.js, Flask, NumPy, pandas

**Technologies:** Azure Cloud Services, AWS, Alibaba Cloud AI Services, Git, MS Power BI

## EXPERIENCE

Machine Learning Intern – Ab Ovo

*Abu Dhabi, UAE* | 05/2025 – Present

- Building **PIKE-RAG system** to transform complex railway legal media into actionable B2B insights
- Engineering data ingestion pipelines, including document chunking, semantic embedding, and vector DB integration
- Optimizing LLM outputs via prompt engineering to ensure contextually accurate business analysis from legal sources

Cybersecurity Undergraduate Research Fellow – Khalifa University

*Abu Dhabi, UAE* | 10/2024 – Present

- Co-authoring journal paper titled "Real-Time Intrusion Detection at the Edge Leveraging Hybrid Transformers," planned for **publication by beginning of June 2025**
- Conducted experimentation on binary & multi-class classification of Transformers on NIDS datasets, **improving on accuracy and time by 31%** with data ingestion strategies & hyperparameter tuning

Software Engineering Intern – Siemens Industrial LLC

*Abu Dhabi, UAE* | 06/2024 – 08/2024

- Developed a KPI automation tool using Python, minimizing overall **data processing time by 80%**
- Participated in cybersecurity upgrade project and used **MS Power BI & MS Project** to support execution & monitoring phases
- Completed extensive **training on Siemens EA portfolio** and project management, practical experience at Power Academy

## PROJECTS

**GreenCart** *Flutter* | *Python* | *Rest API* | *Gemini* – **DEMO:**

- Built **GreenCart** to promote sustainable shopping, securing 9,000 AED prize against **20 teams**
- Utilized **Flutter for front-end, Python & Flask for back-end** and integrated **Google's Gemini & various APIs using JS**
- Enabled real-time product analysis and sustainability insights, aligning with 5 SDGs and the UAE's Green Agenda

**Socia** *Python* | *Expo* | *React Native* | *Flask* | *Azure* – **WEBSITE:**

- Implemented a cross-platform mobile app using **React Native and Flask-Python backend** integrated with Azure AI
- Designed 4 realistic practice environments, improving user engagement and public speaking proficiency by **70%**

**F.A.L.C.O.N. Flood Monitoring System** *Python* | *CNN* | *Torch* | *React* | *Flask* | *OpenAI* – **DEMO:**

- Deployed a **YOLOv9 model** for real-time flood segmentation on **satellite imagery** using **DEMs for flood volume**
- Developed a **cloud pipeline for scalable flood detection** and visualization, supporting urban disaster planning in the UAE

**AuroAI** *Python* | *Expo* | *TensorFlow* | *React Native* | *Flask* | *Azure ML* – **WEBSITE:**

- Implemented **React Native frontend with Flask-Python/Azure AI backend** for cross-platform Autism caregiver app
- Built **TensorFlow emotion-recognition** pipeline integrated via Azure Cognitive Service
- Developed Node.js WebSocket speech-to-text microservice delivering rapid feedback

**Voice-Controlled Smart Car with AI Assistant** *Python* | *RPI4* | *GTTS* | *OpenAI:*

- Designed and assembled a portable voice-controlled car system using **Raspberry Pi 5** and **Arduino Uno**
- Implemented pipeline where audio input is processed via **Google TTS**, classified into commands with **GPT-4** model
- Integrated custom-built **Alexa-like AI assistant** with speaker for interactive user feedback, for an all-in-one portable solution